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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/973,306 04/10/98 LEIJON

M 70563-2/8245

EXAMINER

MM92/0515

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RILEY, S
ART UNIT 5

PAPER NUMBER

2838
DATE MAILED:

05/15/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/973,308

Applicant(s)

LEIJON ET AL.

Examiner

Shawn Riley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-55 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-55 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 1999 is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) ____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 17) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: _____.

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Response to Amendments

Applicants arguments and amendments filed 1 May 2000, after careful consideration and further research, have been deemed unpersuasive.¹

As to the drawings that were attached to the instant amendment, none were found in the instant case, either by office error or otherwise and therefore the objection has been maintained.²

Note that Elton (U.S Patent 3,014,139) shows, as newly amended claim 1 illustrates, an inner and outer semiconducting layer and also a rounded cable. As to the argument that the examiner used "classic hindsight reasoning" the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. In re Nomiya, 184 USPQ 607 (CCPA 1975). However, there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. In re Simon, 174 USPQ 114 (CCPA 1972); In re McLaughlin, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art, rather than by their specific disclosures. In re Bozek, 163 USPQ 545 (CCPA 1969).

¹ In response to applicant's arguments (as initially stated in the 12 October 1999 amendment and restated in the instant amendment) that Elton fails to suggest or teach the use of his cable in a dynamo-electric machine, applicant's attention is directed to the abstract whereby Elton suggests that his insulated conductor may be used in windings of dynamoelectric machine. In response to applicant's arguments that Elton does not provide a solid insulating system, note that element 106 in figure 1 is insulation. Moreover, this arrangement is also known and taught by Breitenbach et al. (USP 4,785,138).

² It is noted that applicant did respond in the amendment and it (the amended drawings) appear to have been separated from the amendment here at the office and not matched up with the case.

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As to applicant's allegation that the combination of references is "unsupportable" it is important to note the following. The test for combining references is not what the individual references themselves suggest but rather what the combination of the disclosures taken as a whole would suggest to one of ordinary skill in the art. In re McLaughlin, 170 USPQ 209 (CCPA). Applicant's allegation of "impermissible hindsight" does not ring true. See In re Sheckler, 168 USPQ 716 (CCPA 1971)

[W]e are persuaded that the differences in material or form between the subject matter claimed and prior art are such that the subject matter as a whole would have been obvious. . . . All that is required to show obviousness is that the applicant 'make his claimed invention merely by applying knowledge clearly present in the prior art. Section 103 requires us to presume full knowledge by the inventor of the prior art in the field of his endeavor.' *In re Winslow*, 53 CCPA 1574, 15778, 365 F.2d 1017, 10202, 151 USPQ 48, 50-51 (1966).

With regard to Jeanneret "not disclos[ing] a high voltage machine in accordance with the invention" the applicants arguments are not well taken. The term high voltage is very broad. Jeanneret discloses a system with at least one current carrying conductor (the power supply) with a magnetically permeable insulating cover operating up to the maximum capacity (voltage/current/power) of the motor, some motors operating at what would be considered high voltage. Nevertheless, since applicant has amended the claims to recite the term high voltage, in

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an effort to further the prosecution of the case and clarify issues, Shildneck (U.S. 3,014,139) and Breitenbach et al (U.S. Patent 4,785,138).

Drawings

1. The drawings are still objected to (please see footnote 2) because they fail to label (figure 2) what the element boxes 1, 2 and 5, also unlabeled element in figures 4 and 5 need labels. Without some indication as to the content of the boxes (or preferably ansi symbols of the actual elements) it is not clear as to what the elements are and they are not explanatory to a reader as a quick method of determining the general background of the invention.

See MPEP 608.02 subparagraph (o) -- Legends

Suitable descriptive legends may be used, or may be required by the Examiner, where necessary for understanding of the drawing, subject to approval by the Office. They should contain as few words as possible.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole

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would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 and 12-29, 31-52, and 54-55 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant Disclosed Prior Art Figures 1 and 2 in view of Takaoka et al. (USP 5,094,703) and further in view of Jeanneret (U.S. Patent 5,408,169) and in light of Shildneck (U.S. 3,014,139) or Breitenbach et al (U.S. Patent 4,785,138).

2. Applicant disclosed prior art figures 1 & 2 disclose the claimed invention except for a teaching of having the electrical cable comprised of a plurality of uninsulated stranded conductors and an insulated stranded conductor. Jeanneret shows, (in, e.g., figures 1, 3 or 8 and the respective corresponding disclosure) a rotating asynchronous converter employing a high voltage electric machine comprising a stator, a rotor, and a winding, wherein at least one of said windings comprises a cable including at least one current carrying conductor and a magnetically permeable, electric field confining over surrounding the conductor, said cable forming at least one uninterrupted turn in the corresponding winding of said machine.

Takaoka et al., as seen in figures 7,8,10 and 11 teach having a stranded conductor for an electrical cable comprising a combination of uninsulated stranded conductor and an insulated stranded conductor. Shildneck (U.S. 3,014,139) (see e.g., column 6 lines 28-33) or Breitenbach et al (U.S. Patent 4,785,138) disclose, explicitly, the use of rounded cable in high voltage applications.

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It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the circuitry of Jeanneret and the windings of Applicant Disclosed Prior Art Figures 1 & 2 comprising of insulated and uninsulated electrical conductor strands using round conductors in a high voltage applications as shown in Shildneck (U.S. 3,014,139) or Breitenbach et al (U.S. Patent 4,785,138) since such a modification according to Takaoka et al. would reduce the amount of insulation needed and the number of electrical connections required in the end windings.

3. Alternatively, claims 1-9 and 12-29, 31-52, and 54-55 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant Disclosed Prior Art Figures 1 & 2 in view of Takaoka et al. (USP 5,094,703) and further in view of Elton et al. (USP 5,036,165)) and further in view of Jeanneret (U.S. Patent 5,408,169) in light Shildneck (U.S. 3,014,139) or Breitenbach et al (U.S. Patent 4,785,138).

3. Applicant disclosed prior art figures 1 & 2 and Takaoka et al. disclose the claimed invention except for utilizing a cable in the electrical machine having conductors with semiconducting properties. Jeanneret shows, (in, e.g., figures 1, 3 or 8 and the respective corresponding disclosure) a rotating asynchronous converter employing a high voltage electric machine comprising a stator, a rotor, and a winding, wherein at least one of said windings comprises a cable including at least one current carrying conductor and a magnetically permeable, electric field confining over surrounding the conductor, said cable forming at least one uninterrupted turn in the corresponding winding of said machine.

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Shildneck (U.S. 3,014,139) (see e.g., column 6 lines 28-33) or Breitenbach et al. (U.S. Patent 4,785,138) disclose, explicitly, the use of rounded cable in high voltage applications.

Elton et al. teach that it is known to have an electrical cable comprising an internal grading layer of semi-conducting pyrolyzed glass fiber layer in electrical contact with the cable conductor. In another form of embodiment, Elton et al. teach an electrical cable provided with an exterior layer of internal grading layer of semi-conducting pyrolyzed glass fiber layer in contact with an exterior cable insulator with a predetermined reference potential.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have used the circuitry of Jeanneret and the cable assembly of Elton et al. to the device as disclosed in prior art figures 1 and 2 using round conductors in a high voltage applications as shown in Shildneck (U.S. 3,014,139) or Breitenbach et al (U.S. Patent 4,785,138) since such a modification according to Elton et al. would provide a conductor which prohibits the development of corona discharge. In regard to forming the semiconducting layer with the same coefficient of thermal expansion as that of the insulation layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed these layers with similar coefficients since it was known in the art that the expansion rate of the two layers would be the same and this is desirable in order to prevent cracking of the insulation and wear between the two.

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Alternatively, claims 1-9 and 12-29, 31-52, and 54-55 are rejected under 35 U.S.C. § 102(b) as being fully anticipated by Elton et al. (USP 5,036,165).

Elton et al. disclose an electrical cable provided with an internal grading layer of semi-conducting pyrolyzed glass fiber layer in electrical contact with the cable conductor. In another embodiment, Elton et al. disclose an electrical cable provided with an exterior layer of internal grading layer of semi-conducting pyrolyzed glass fiber layer in contact with an exterior cable insulator with a predetermined reference potential.

In regard to the range of insulator and conductor resistivities, Elton et al. teach having an insulator resistivity in the range of 10^{12} ohms per square or more and a conductor having a resistivity of 10^{-1} ohms per square or less. Moreover, Elton et al. disclose utilizing the range of resistivity for the potential layer(s) between 200 to 100K ohms per square. See figure 1.

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Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Alternatively, claims 1-9 and 12-29, 31-52, and 54-55 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Elton et al. (USP 5,036,165) in view of Takaoka et al. (USP 5,094,703) in light of Shildneck (U.S. 3,014,139) or Breitenbach et al. (U.S. Patent 4,785,138)

Elton et al. disclose the claimed invention except for a teaching of having strands of the electrical conductor uninsulated.

Takaoka et al., as seen in figures 7,8,10 and 11 teach having a stranded conductor for an electrical cable comprising a combination of uninsulated stranded conductor and an insulated stranded conductor. Shildneck (U.S. 3,014,139) (see e.g., column 6 lines 28-33) or Breitenbach et al (U.S. Patent 4,785,138) disclose, explicitly, the use of rounded cable in high voltage applications.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided the windings of Elton et al. comprised of insulated and

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uninsulated electrical conductor strands using round conductors in a high voltage applications as shown in Shildneck (U.S. 3,014,139) or Breitenbach et al (U.S. Patent 4,785,138) since such a modification according to Takaoka et al. would reduce the amount of insulation needed and the number of electrical connections required in the end windings. In regard to forming the semiconducting layer with the same coefficient of thermal expansion as that of the insulation layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have formed these layers with similar coefficients since it was known in the art that the expansion rate of the two layers would be the same and this is desirable in order to prevent cracking of the insulation and wear between the two.

Claim Rejections - 35 U.S.C. 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Alternatively, claims 1-9 and 12-29, 31-52, and 54-55 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Jeanneret (U.S. Patent 5,408,169). Jeanneret shows a rotating asynchronous converter employing a high voltage electric machine comprising a stator, a rotor, and a winding, wherein at least one of said windings comprises a cable including

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at least one current carrying conductor and a magnetically permeable, electric field confining over surrounding the conductor, said cable forming at least one uninterrupted turn in the corresponding winding of said machine.

Allowable Subject Matter

6. No claims are allowable over the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Riley whose telephone number is 703.305.3487. The Examiner can normally be reached Monday through Thursday from 7:30-6:00 p.m. Eastern Standard Time. The fax phone number for this Group is 703.305.7731 or 7732. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is 703.308.1782.



Shawn Riley
Primary Examiner
Art Unit 2838